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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,779	08/01/2003	Daryoosh Vakhshoori	AHURA-I	5052
7590	10/05/2005			
Mark J. Pandiscio Pandiscio and Pandiscio, P.C. 470 Totten Pond Road Waltham, MA 02451-1914			EXAMINER LEPISTO, RYAN A	
			ART UNIT 2883	PAPER NUMBER

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/632,779

Applicant(s)

VAKSHOORI ET AL.

Examiner

Ryan Lepisto

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2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-14, 16, 24-34, 36-38, 40, 48-55, 57-59, 61 and 69 is/are rejected.
- 7) ☒ Claim(s) 11, 15, 17-23, 35, 39, 41-47, 56, 60 and 62-68 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1-9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 206I, 206K, 212I, 212K, 312.
3. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Claim Objections

4. **Claim 69** is objected to because of the following informalities: It depends from claim 4, but the preambles do not match. It is believed that this claim was supposed to depend from claim 49. For the sake of this action, the office will treat this claim as it depends from claim 49. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 49-52 and 58-59** are rejected under 35 U.S.C. 102(b) as being anticipated by **Gabbert (US 6,038,239)**. Gabbert teaches (Figs. 1-4) a spectrally filtered (column 4 lines 18-24, column 5 lines 43-49) high power broadband (column 4 lines 42-46) semiconductor laser light source (LD) comprising a spectrally filtered (via filter (SP) and grating (GI)) amplified spontaneous emission (ASE) (abstract) and amplifying medium (or active region that guides light) (abstract) generated from the source (LD) and coupling source fiber (LWL).

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6. **Claims 1-7, 9, 12-14, 24-31, 33, 36-38 and 48** are rejected under 35 U.S.C. 102(e) as being anticipated by **Ye et al (US 6,542,287 B1) (Ye)**. Ye teaches a system for amplifying optical signals (Figs. 1-3) in a wavelength division multiplexing arrangement (column 3 line 21) comprising a optical fiber (16) for carrying a signal, a high power broadband light source (12) including multiple Raman pump sources such as lasers combined to give a wide gain spectrum (column 3 lines 52-62), a connector (between 12 and 16) for coupling the signal from the source (12) to the fiber (16) as a Raman pump to induce Raman amplification (column 3 lines 45-50) through the doped fiber (the doped region being the active region) or other semiconductor amplifier stages (column 3 lines 40-41) (giving spontaneous emission), a filter (42) (either dielectric, which is a film or grating) (column 5 lines 40-43) to filter the signal for a desired spectral distribution.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 53 and 69** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gabbert as applied to claims 49-52 and 58-59 above, and further in view of Yeniyay et al (**US 2002/0118445 A1**) (**Yeniyay**).

Gabbert teaches the light source described above.

Gabbert does not teach expressly the optical component comprising a planar waveguide or a fiber that has amplifying properties.

Yeniay teaches an optical amplifier and also that ASE devices can be made to incorporate into planar waveguides and amplifying media (doped fibers) (paragraph 0103).

Gabbert and Yeniay are analogous art because they are from the same field of endeavor, optical amplifying systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the teaching of Yeniay that ASE devices can be incorporated in various optical components to use planar or fiber amplifiers in Gabbert.

The motivation for doing so would have been increase design flexibility by being able to incorporate the source with existing components or the least costly or most efficient devices.

8. **Claims 54-55 and 61** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gabbert as applied to claims 49-52 and 58-59 above, and further in view of **Waarts et al (US 6,212,310 B1)** (Waarts).

Gabbert teaches the light source described above.

Gabbert does not teach expressly two discrete sources combined to yield a composite source with two orthogonal linear polarizations.

Waarts teaches a high power fiber gain system used in multiplexing (Fig. 7 using polarization beam multiplexing (PBM) (column 3 lines 42-49, column 4 lines 11-12) that

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couples the energy from two different sets of polarization modes from different emission wavelength diode lasers (112) and combine them via couplers (C₁).

Gabbert and Waarts are analogous art because they are from the same field of endeavor, optical amplifying systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine sources of different wavelengths with opposite polarizations as taught by Waarts as the source in Gabbert.

The motivation for doing so would have been to increase efficiency by reducing noise using the multiple sources (Waarts, column 13 lines 12-15).

9. **Claim 57** is rejected under 35 U.S.C. 103(a) as being unpatentable over Gabbert as applied to claims 49-52 and 58-59 above, and further in view of **Goldstein (US 6,522,465 B1)**.

Gabbert teaches the light source described above.

Gabbert does not teach expressly the filter being a thin-film.

Goldstein teaches spectral filtering of high power radiation using a thin film layer filter and grating (abstract)

Gabbert and Goldstein are analogous art because they are from the same field of endeavor, spectrally filtered high power sources.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a thin-film filter as taught by Goldstein as the filter in Gabbert.

The motivation for doing so would have to reduce cost by using well know materials and material processes for the filter

10. **Claims 8 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye as applied to claims 1-7, 9, 12-14, 24-31, 33, 36-38 and 48 above, and further in view of Yeniy.

Ye teaches the amplifying system described above.

Ye does not teach expressly the optical component comprising a planar waveguide.

Yeniy teaches an optical amplifier and also that ASE devices can be made to incorporate into planar waveguides and amplifying media (doped fibers) (paragraph 0103).

Ye and Yeniy are analogous art because they are from the same field of endeavor, optical amplifying systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the teaching of Yeniy that ASE devices can be incorporated in various optical components to use planar or fiber amplifiers in Ye.

The motivation for doing so would have been increase design flexibility by being able to incorporate the source with existing components or the lease costly or most efficient devices.

11. **Claims 10, 16, 34 and 40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye as applied to claims 1-7, 9, 12-14, 24-31, 33, 36-38 and 48 above, and further in view of Waarts.

Ye teaches the amplifying system described above.

Ye does not teach expressly two discrete sources combined to yield a composite source with two orthogonal linear polarizations.

Waarts teaches a high power fiber gain system used in multiplexing (Fig. 7 using polarization beam multiplexing (PBM) (column 3 lines 42-49, column 4 lines 11-12) that couples the energy from two different sets of polarization modes from different emission wavelength diode lasers (112) and combine them via couplers (C₁).

Ye and Waarts are analogous art because they are from the same field of endeavor, optical amplifying systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine sources of different wavelengths with opposite polarizations as taught by Waarts as the source in Ye.

The motivation for doing so would have been to increase efficiency by reducing noise using the multiple sources (Waarts, column 13 lines 12-15).

Allowable Subject Matter

12. **Claims 11, 15, 17-23, 35, 39, 41-47, 56, 60 and 62-68** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

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independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: These claims would be allowable over the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims because the latter, either alone or in combination, does not disclose nor render obvious a high power broadband light source comprising filtered ASE generated from an optical component so that light has short coherence length and two orthogonal linear polarizations are created using an optical fiber depolarizer, or as least one wavelength seed section for generating ASE and at least one power booster section for amplifying the ASE in an optical waveguide, or a plurality of waveguides each comprising a wavelength seed section for generating ASE, a filter for tailoring the ASE to a particular wavelength range and a multiplexer for combining the outputs of the plurality of optical ASE waveguides, in combination with the rest of the claimed limitations.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hansen et al (US 6,697,558 B2) anticipates claims 1 and 2.
- International search report for PCT/US03/24162.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Lepisto whose telephone number is (571) 272-1946. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

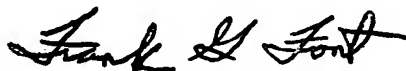
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Ryan Lepisto

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Date:



Frank Font

Supervisory Patent Examiner

Technology Center 2800